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ABSTRACT

An examination was made of five major campus fires between 1971 and 1983 in an attempt to better understand the fire hazards associated with the operation of a modern U.S. college or university campus. Overall research revealed a general lack of interest in campus fire safety by colleges and universities in the United States and Canada. Analysis of the five campus fires clearly revealed that in each instance it was possible to identify poor architectural advice which resulted in improper construction, protection, or use of the building. Furthermore, it was found that building codes often do not fully recognize the needs of the nontraditional and handicapped student in the event of a fire. It is crucial that the architect provide sound advice to the administrator in the designing of adequate construction and development of fire protection plans. Equally important is the need for the campus administrator to develop complete emergency preparedness plans, to institute a program of hazard recognition, and to control and monitor campus building use. Protection plans should: (1) assure the safety of all persons using the facilities; (2) assure the mission of the institution; and (3) minimize damage to the facilities. Contains 29 references. (GLR)

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Ignorance and Hazards in Academe: The Dilemma of Fire Safety in American Higher Education

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Abstract

This paper marks the first attempt to analyze data on life and campus facility safety from fire with the object of provision of a better understanding of the fire hazards associated with the operation of a modern American college or university institutions of higher education have within their campuses a great deal of unrecognized exposure from fire and other hazards that threaten the safety of everyone. Data was analyzed from: National Fire Protection Association, Campus Safety Association, fire insurance companies, federal and state personnel related to the Occupationalal Safety and Health Act, Center for Educational Statistics, Federal Housing Administration, Center for Architectural Research at Rensselaer Polytechnic Institute and interviews with selected leaders in fire safety. The examination of five major campus fires between 1971 and 1983 identify two major actors in campus fire safety: the architect and the senior campus administrator. It is crucial that the architect provide sound advice to the administrator in the designing of adequate construction and of fire protection plans. Equally important is the need for the campus administrator to develop complete emergency preparedness plans, to institute a program of hazard recognition, and to control and monitor campus building use.

Ignorance and Hazard in Academe: The Dilemma of Fire Safety in American Higher Education

Institutions of higher education within their campuses a great deal of unrecognized exposure from fire and other hazards that threaten the safety of everyone involved. There is a lack of understanding on the part of administrators and educators in higher education about the fire hazards at their institutions. There is almost a lack of interest! It reminds me that several weeks ago I had the opportunity to visit the Shogun's palace. At the end of the day when the Shogun returned to his living quarters he had tea with the ladies of the palace. The lady to be his companion for the night would prepare herself and the tea. If the Shogun was not interested . . . He would comment "It is not my cup of tea!" Which seems to be the attitude of many administrators and educators at our institutions of higher education when it comes to unfriendly fires on campus.

Numerous fire hazards do exist on our college and university campuses. For example, the National Fire Protection Association (NFPA) reported that during 1980 there were 19,500 fires at educational institutions. During the period between 1971 and 1983 there were forty-two fires that caused numerous student deaths and injuries, injuries to fire department personnel, and damage to facilities. The Factory Mutual Research Corporation, the statistical analysis unit of a large insurance group that insures many institutions of higher education, reports that for the period of this study (1971-1983) that over seventy-three

percent of the campus fires were incendiary (set fires). In addition, there are the other causes such as electrical, smoking, cutting, and welding. There is sufficient reason for administrators and educators to be concerned about fire safety on the campuses of institutions of higher education.

The Campus Safety Association (CSA), a unit of the National Safety Council, has been working for campus safety for over thirty-six years. The monographs presented at the annual meetings are an extremely valuable body of information on problems and solutions regarding fire and personal safety on our campuses. There is only one problem, less than ten percent of the institutions of higher education in the United States and Canada are active in the organization. I suspect that one could draw a Bell Curve that would show interest to lack of interest in campus fire safety. This lack of interest in the CSA by administrators reflects the level of concern about life and facility safety on our college and university campuses.

Just like each of us . . . we commit of our substance, where our interests are.

There are some <u>real</u> changes taking place on our campuses right now. There must be a <u>real</u> change in attitude regarding life safety on college campuses . . . before a real disaster occurs. The number of nontraditional students (over the age of twenty-five) continues to increase on our college campuses. Consideration needs to be given to improve evacuation procedures, to provide compartmentation (safe haven) in buildings, and the installation of automatic sprinkler fire protection equipment. The Center for Educational Statistics projects that by 1992 fifty

percent of the students in our colleges will fall into the nontraditional category. With aging there is a natural physical slow down. It takes longer to respond to an emergency. (Escape time requirements will be discussed further.) In addition, there has been an increase in physically, visually, and hearing impaired student on our campuses. Up till now, the problem has been entry and use of facilities by these students. I now ask the question, how do these students escape in the event of a fire in a campus building. Elevators are automatically shut down during a fire, many of the handicapped students cannot negotiate stairs. The nontraditional and handicapped students have special needs during an emergency that must be addressed.

The National Fire Codes, the various building codes, do not yet fully recognize the needs of the nontraditional and handicapped students. It is doubtful that code officials understand the population changes that are currently taking place on most campuses. It probably will take a disaster to start discussions.

> Lake View School, Collinwood, Ohio, burned on March 4, 1908, with the loss of 172 students and two teachers. Resulted in the standards that exit doors must open out.
>
> The 1903, Chicago Iroquois Theater fire in which 581 of the 1,830 persons in the audience died in the first few minutes of the fire, resulted in standards for the protection of buildings used for public assembly. Many of the buildings on college and university campuses are considered public assembly by code and fire department officials.

Our Lady of Angels school in Los Angeles suffered a fire on December 1, 1958. Ninety-five students and teachers died. The findings resulted in improvements to the Life Safety Code.

I fear that it will take a severe fire, with a resulting loss of life of nontraditional and handicapped students, at an institution of higher education for their special needs to be recognized. Administrators should know that many times building and fire codes are changed and updated after the fact. However, buildings are "grandfathered" to the year they were constructed and do not need to be updated because of a change in the population

After the 1958, Our Lady of Angels school fire the Los Angeles Fire department and the NFPA ran a number of fire tests in a school building that was to be torn down. The tests were sponsored by the Educational Facilities Laboratories, established by the Ford Foundation. One of the more important findings was that occupants of educational facilities have two minutes to evacuate safely. After that time persons on the building must rely on the fire department to rescue them. This limited escape time was confirmed by an independent study at the Center for Architectural Research at Rensselaer Polytechnic Institute. Professor R. D. Caravaty developed the Fire Design Philosophy curve in which he indicated that an athlete (young vigorous person) could escape from a building of up to seven stories. However, the nontraditional, handicapped, and temporarily ill would have to seek refuge in the building. This is not too desirable of an option as few, if any, of even the most modern

buildings, have adequate compartmentalization. An adequate compartment would protect the occupant from the fire, resulting heat, and smoke. Additional studies and testing are needed to determine the life safety requirements of nontraditional and handicapped students, faculty, and administrators.

Administrators and educators must seek sound advice from architects when plans are being developed for new buildings or when major renovations are carried out on campus buildings. In his book on "Educational Facilities" Castaldi points out that the selection of an architect is one of the most important steps when constructing new buildings or renovating existing facilities. This is not as easy as it sounds. D. O. Ross, Supervising Architect at Michigan State University, indicates that "Many architects' attitudes toward codes and ordinances are that they are so much paper." A review of the curriculum at fourteen schools of architecture showed that only one school had a required course, two schools had an optional class, and another incorporated some materials on fire safety. An in-depth review of five fires from 1971-1983:

Temple University Charles Klein Law Library was a total loss.

Skidmore College dormitory fire resulted in two students being injured and one student dying.

Providence College dormitory fire resulted in twenty students being injured and ten dying.

West Hills Community College dormitory fire resulted in the total destruction of the building.

William and Mary College dormitory fire caused a

major portion to be destroyed.

In each instance it was possible to identify poor architectural advice, which resulted in improper construction, protection, or use of the building. These weaknesses contributed construction of new or renovation of existing buildings.

Four of the five fires just mentioned occurred in dormitories. I was only able to locate one documented case where the administration of a university was perceptive enough to take action to improve the safety of their dormitories. The administration at Eastern Washington University took action to upgrade all of their dormitories to the latest Life Safety Code after the November 1980 MGM Grand Hotel fire in Las Vegas in which eighty-five persons lost their lives. The hotel fire brought about an awareness that the dormitories were indeed very similar to the hotel. It took four and a half years and $1,371,-373 to complete the improvement for life safety in the dormitories. Of the thousands and thousands of institutions of higher education in the United States and Canada the administration of only one university was able to make the correlation!

There is a need for administrators to determine the condition of their facilities. A continuous program of evaluation of life and facility safety is needed. A plan for crisis management should be established. Objectives of the plan should be to:

1. Assure the safety of all persons using the facilities
2. Assure the mission of the institution.
3. Minimize damage to the facilities.

The person in charge of the crisis management program should report to the senior administrator. The program must be es-

tablished before an emergency occurs. It is too late after the emergency occurs. Fire prevention, handling of emergencies, restoration of services, and cooperation in the event of a public emergency should all be a part of the plan. Things that administrators and educators do not know can hurt people, disrupt the mission of the institution, and destroy important facilities.

Suggestions for Further Research

1. Clark College Fire. On May 17, 1984 a major portion (about twenty-five percent) of the campus buildings were destroyed.
2. The major hazards to life safety in off-campus housing.
3. The curriculum at schools of architecture.
4. The process of selecting an architect.
5. Disaster recovery planning.

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